

AL'TSHULER, B.A.; SAIMANOV, G.D.; SOKOL'SKIY, A.D.; KARASEV, P.F.

Use of refractory concrete for lining cars and tunnel annealing
lehrs. Ogneupory '22 no.7:326-329 '57. (MERA 10:8)
(Refractory materials) (Concrete)

KARASEV, P.P.

AL'TSHULER, B.A.; SALMANOV, G.D.; SOKOL'SKIY, A.D.; KARASEV, P.P.

Use of heat-resistant concrete for the construction of electric
(vacuum) bell furnaces for annealing. Ogneupory 22 no.9:425-429
'57. (MIRA 10:11)

1. Nauchno-issledovatel'skiy institut Metallurgkhimistroya i
Sverdlovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta
promyshlennykh sooruzheniy.
(Electric furnaces) (Concrete)

84186

S/019/60/000/013/064/112

A152/A029

26-2252

AUTHORS: Burtsev, V.T., Samarin, A.M., Bulakhov, K.A., Gurskiy, G.V.,
Karasev, R.A., Kazanskiy, V.A.

TITLE: A Device for Pumping Liquid Metal

PERIODICAL: Byulleten' izobreteniy, 1960, No. 13, p. 49

TEXT: Class 31c, 12⁰². No 129800 (630426/22 of June 8, 1959). This device constitutes a vacuum chamber with two vertical channels for liquid metal being pumped by an induction pump. It has the following special features: to extend the free area of metal by atomizing the metal stream, the above channels are longer than the height of the metal column raised under the influence of the difference between the atmospheric pressure and the pressure in the chamber, in order to make metal overflow over the baffle of the vacuum chamber, from one channel into the other, after the induction pump has been switched on. X

Card 1/1

KARASEV, R. A.

KARASEV, R. A. -- "INVESTIGATION OF THE REDUCING POWER OF VANADIUM." SUB 5 FEB 52, INST OF METALLURGY IMENI A. A. BAYKOV, ACAD SCI USSR (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

KARASEV, R. A.

USSR/Metallurgy - Steel, Gas Analysis Sep 52

"Determination of Oxygen, Nitrogen and Hydrogen in Hard Steel," R. A. Karasev, A. Yu. Polyakov

Iz Ak Nauk SSSR, Otdel Tekh Nauk, No 9, pp 1360-1368

Describes apparatus for detn of gases in steel by method of melting in vacuum. Installation is

equipped with 15-kw high-frequency vacuum furnace. Analysis of extracted gas is performed by liquid N freezing out of its components at temp of calibration and measuring amount of these components in calibrated vols at room temp. Performance of installation is characterized by very small correction factor

248791

for O and H and by high productivity -- 15-16 samples per day. Submitted by A. M. Samarin, Corr Mb Acad Sci USSR, 22 May 52.

248791

238T15

KARASEV R. A.

USSR/Chemistry - Vanadium

Aug 52

"Solubility and Activity of Oxygen in Molten Iron and Vanadium," R. A. Karasev, A. Yu. Polyakov and Corr Mem Acad Sci USSR A. M. Samarin, Inst of Metallurgy imeni A. A. Baykov, Acad Sci USSR

"DAN SSSR" Vol 85, No 6, pp 1313-1316

The results from the exptl detn of the deoxidizing capacity of V are presented. V lowers the solubility of O in liquid Fe and decreases its activity. V has a much lower deoxidizing capacity than Si.

238T15

KARASEV, R.A.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
General and Physical Chemistry

Reducing ability of vanadium. R. A. Karasev, A. Yu. Polyakov, and A. M. Samarin. *Izv. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1952, 1794-1801; cf. C.A. 44, 9367g. — The reducing ability of V was examd. in connection with the effect of V on soly. and activity of O_2 dissolved in liquid Fe. In the exptl. installation equil. was attained between liquid Fe that contained V and the gas phase of H_2 and H_2O (complete description of the app. is given). V reduces the soly. of O_2 in liquid Fe and lowers the activity of O_2 . V appears to be a weaker reducing agent than Si. Depending on the content of V in liquid Fe (the range examd. was from 0 to 2.5%) and consequently on the partial pressure of O_2 in the gas phase, the compn. of the oxide phase, formed by oxidation of Fe-carried V, also changes. Up to 2% V the compn. of the oxide phase varies from variable values up to VO_2 .

Chemt
(3)

MF
4-28-54

KARASEV, R. A.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Metallurgy and Metallography

B
(2) met

' Activity of carbon and oxygen in melts of iron-carbon-oxygen. A. M. Samarin and R. A. Karasev. *Invest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 1180-8; cf. C.A. 45, 4187d; Marshall and Chipman, C.A. 36, 6118¹.—In Fe-C melts contg. less than 1% C the activity coeffs. of C and O are substantially constant quantities. Results obtained at 1640° by M. and C. were examd., and the values of CO and CO₂ partial pressures recalcd. Since the differentiated form of the reaction equation can be written as: $\log(P_{CO}^2/P_{CO_2}) = \log K_1 + \log f_C + \log f_O$, the necessary terms were calcd. from the above data. Up to 1% C content the plot of $\log(P_{CO}^2/P_{CO_2})$ against $\log[\%C]$ gave a straight line, indicating clearly that the activity coeff. of C in liquid Fe contg. O is constant. Values from compus. with more than 1% C were too few to be employed in calcs., but their scattering on the plot was noted. G. M. Kosolapoff

KARASEV, R. A.

USSR/Chemistry - Metallurgy

Card 1/1 : Pub. 124 - 10/24

Authors : Karasev, R. A., Cand. of Tech. Sc.; and Polyakov, A. Yu.

Title : ~~XXXXXXXXXXXX~~
Determination of gas contents in metals and alloys

Periodical : Vest. AN SSSR 11, 61-62, November 1954

Abstract : An industrial method for the determination of gas contents (hydrogen, oxygen, nitrogen) in steel and alloys is briefly described. This method is considered highly universal from the view point of the number of gases to be determined and is also very suitable for the analysis of various types of steel. A special rational system developed at the A. A. Baykov Metallurgical Institute of the Academy of Sciences USSR, which is used in conjunction with the above mentioned method, is described.

Institution :

Submitted :

KARASEV, ROBERT ALEKSEYEVICH

SAMARIN, Aleksandr Mikhaylovich, KARASEV, Robert Alekseyevich, kandidat
tekhnicheskikh nauk; VERTMAN, Aleksandr Abramovich, inzhener;
KAREV, Viktor Nikolayevich, kandidat tekhnicheskikh nauk;
UDAL'TSOV, A.N., glavnyy redaktor; SHTYNBOK, G.Yu., redaktor

[Apparatus for studying kinetic processes at high temperatures.
Apparatus for studying the discharge of viscous liquids through
orifices and nozzles] Ustanovka dlia issledovaniia kinetiki protsessov
pri vysokikh temperaturakh. Ustanovka dlia issledovaniia
istecheniia viskikh zhidkostei iz otverstii i nasadkov. Tema 4.no.P-56-457
(MLRA 10:5)
Moskva, 1956. 15 p.

1. Moscow, Institut tekhniko-ekonomicheskoy informatsii.
(Chemical apparatus) (Viscosity) (Fluid dynamics)

KARASEV, R.R.

Sulfur activity in silicon-containing iron R. A. Karashev
and A. M. Samarin. *Izv. Akad. Nauk SSSR Metall.*
1974, No. 1, 17-22. (In Russian)

The same exposed alloy surface in the last heat-treatment
was assured by using uniform Al_2O_3 crucibles. The
results of the work when measuring the sulfur activity

KARASEV, R.A.

... properties of metallic ... and ...
... A thermodynamic examn. of Kroll and
Selischen's oxides reduction with C (C.A. 42, 5385) in-
dicated the possibility of low-C-V production by a vacuum
reduction at below the m.p. of V (1920°). V_2O_5 obtained
by V_2O_5 reduction with H at 500-600°, was used in the
primary thermographic reduction with C ...

g

KARASLYA

The effect of manganese on the activity of the
catalyst is studied. It is shown that the
activity of the catalyst is increased by the
addition of manganese. The effect of the
concentration of manganese on the activity of
the catalyst is studied. It is shown that the
activity of the catalyst is increased by the
addition of manganese.

its educts such as a low rate of reaction
between the metal and the oxygen. The
effect of the concentration of the metal
on the rate of reaction is studied. It is
shown that the rate of reaction is increased
by the addition of metal. The effect of the
concentration of the metal on the rate of
reaction is studied. It is shown that the
rate of reaction is increased by the
addition of metal.

MT

А.Н.Н.С.Е.В.А.
SAMARIN, A.M.; KARASEV, R.A.

Use of radioactive isotopes in metallurgy. Priroda 45 no.12:14-19
D '56. (MLRA 10:2)

1. Chlen-korrespondent Akademii nauk SSSR. (for Samarin).
(Radioisotopes--Industrial applications)
(Metallurgical research)

KARASEV, R.A., SAMARIN, A.M.

"Equilibrium of Reaction of Liquid Iron Decarbonization at Lower Pressure,"
lecture given at Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1 - 6, 1957

KARASEV R. A.

The O content in the metal from the beginning of V oxidation is determined by its equilibrium with V present in the metal. However, when the metal is oxidized during the after-blow, the O content in the metal is much lower than corresponds to the given V content. During the after-blow at 1400° V can be oxidized only on the gas-metal interface during vigorous stirring. All the factors which tend to increase the reaction surface between the oxidizer and the liquid metal and to raise the O content in the bubbles of the gaseous oxidation must, therefore, favor the oxidation reaction in the molten gas-iron.

W. M. Sternberg

DRIVING, N. YA., KARASHEV, R. A. and SAMARIN, A.M.
Institute of Metallurgy Im. A. A. Baykov, Moscow

"Application of the Mass-Spectrometer to Investigation of the Liquid
Steel Decarbonization Kinetics in Vacuum."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

Moscow - 1-6 July 1958

KARASEV R. A.

BURTSSEV, V. T., KARASEV, R. A. and SAMARIN, A. M.
Institute of Metallurgy im. A. A. Baykov

"Vacuum Desulphurization of the Liquid Iron Alloys."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

Moscow, 1-6 July 1958

SAMARIN, A. M. and KARASEV, R. A.

"Mechanism of Gas Removal from Liquid Metal in Vacuum."

"Some Properties of Vacuum Treated Bessemer Steel."

paper submitted at Fifth National Vacuum Technology Symposium, San Francisco, Calif.,
22-24 Oct 1958.

Comments, B-3,118,970, 8 Dec 58

AUTHOR:

Samarin, A.M., ~~AS-USSR~~ ^{Member} Corresponding 20-119-5-41/59
AS-USSR, and Karasev, R.A.

TITLE:

The Desoxidation Capability of Carbon in Vacuum
(O raskislitel'noy sposobnosti ugleroda v vakuume)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 5,
pp. 990-992 (USSR)

ABSTRACT:

In order to determine the pressure dependence of the desoxidation Capability of carbon a series of experimental meltings was carried out in which liquid iron with various concentrations of carbon in high vacuum was exposed to a certain temperature until the beginning of equilibrium between the carbon and oxygen dissolved in liquid iron. These experiments were carried out at a pressure of $(5 - 7) \cdot 10^{-6}$ torr in a resistance furnace. A molybdenum spiral served as heating device. Crucibles of MgO , Al_2O_3 , ThO_2 , ZrO_2 and BeO proved to be unsuitable and therefore the melting experiments were carried out in corundum crucibles. The results obtained in these experiments are compiled in a table. The experimentally found oxidation

Card 1/3

KARASEV, R.A.

VAN DZIN-TAN; KARASEV R.A.; SAMARIN, A.M.

Determination of the influence of additions in the
surface tensions of liquid iron.

report submitted for the 5th Physical Chemical Conference on
Steel Production.

MOSCOW _____ 30 JUN 1959

18(0)
AUTHOR:

Karasev, R. A., Candidate of
Technical Sciences

SOV/30-59-3-31/61

TITLE:

News in Brief (Kratkiye soobshcheniya). The Fifth National
Symposium on Vacuum Technology (Pyatyy natsional'nyy
simpozium po vakuumnoy tekhnike)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 3, pp 106-107 (USSR)

ABSTRACT:

This symposium was held from October 22 to October 24, 1958
in San Francisco (USA, California). It was attended by more
than 400 persons including representatives from England,
Belgium, Italy, Canada, the USSR, the German Federal Republic,
France, and Japan. Work was carried out by 7 Committees
dealing with the following subjects: bases of vacuum technology;
use in laboratory practice, vacuum systems and their compon-
ents; vacuum devices and the system of training specialists;
ultrahigh vacua; the production of thin films by evaporation;
the application of vacuum technology in industry. The Soviet
delegation consisted of A. M. Samarin, Corresponding Member
of the Academy of Sciences, USSR, and R. A. Karasev,
Candidate of Technical Sciences. They took part in the work
of the 2 last-named committees. A. M. Samarin submitted 2

Card 1/2

News in Brief. The Fifth National Symposium
on Vacuum Technology

SOV/30-59-3-31/61

reports: on the process of gas-removal from liquid metal in
the vacuum, and on some properties of Bessemer steel treated
in the vacuum.

Card 2/2

NOTIFICATION BOOK 1
8757/LOS

PLATE 1 BOX 22

AM USSR, 1960. 334 p. Errata slip inserted. 4,200 copies.
Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii i spets. A.A. Baytova.

Комиссия по физико-химическим основам промышленности
 Учен. Зед.: А.М. Самарин, Corresponding Member, Academy of Sciences USSR; Ed. of
 Учен. Зед.: А.М. Самарин, Corresponding Member, Academy of Sciences USSR; Ed. of

PUBLISHING HOUSE: G.M. MAKOVSKIY (encl. 22.11.1981)
PURPOSE: This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steelmaking practice and equipment.

COVERAGE: The book contains information on steel melting in vacuum induction furnaces, and vacuum arc remelting processes in vacuum, and degassing of molten steel. Also covered are vacuum casting, continuous casting, and vacuum annealing. The book also contains information on the use of vacuum in the production of steel and alloys. The functioning of various types of vacuum equipment, especially vacuum furnaces and vacuum boiling equipment, is also analyzed. Personnel are mentioned in connection with some of the articles and will appear in the table of contents. The book is written in English. Some of the material mentioned in connection with some of the articles has been translated from English.

... of Contents: Three articles have been received from
Kazachkov, I. P.; and G. I. Khitrzik. Effect of Vacuum Treatment [in a Ladle]
of the Carbonless Ferrochrome on the Amount of its Oxide Inclusions. 127

VEDJORY, F.A., and F.I. SHURRAY. Physicochemical Principles of Vacuum-Thermal Methods of Treating Lithium 197

PART IV. BRASSING OF STEEL AND ALLOYS.

Novik, L.M., A.I. Lohutin, and A.M. Sesarin. Vacuum Treatment of Bessemer 145

Steel
Kumstakov, M.P., and G.S. Trukhanov. The Effect of Vacuum Treatment in Ladle
on the Properties of Bessemer Hall Steel 151

Vrasovskiy, A.I., and V.D. Kodelov. The Effect of Vacuum Treatment in Ladle
--on the Weldability of Bessemer Constructional Steel

Olya, G.M., G.A. Solov'ov, I.I. Anshakov, N.N. Yarovaya, L.L. Denisov, and N.G. Lapshova. Use of Vacuum for Improving the Quality of Alloyed Steels 166

Markaryants, I.A., and Yu.D. Kalinov.
Yans of Steel Degassing
Some Theoretical and Practical Problems
178

Chayko, M.M., A.V. Treubenko and Ye.I. Kadynov. The Effect of the Treatment of Metal Pouring on the Quality of Ship's Steel [the work was performed by the Dnepropetrovsk metallurgicheskii institut (Dnepropetrovsk Metallurgical Institute)]. Dnepropetrovsk: Dnepropetrovskii metallurgicheskii institut, 1967. 100 p. (Dnepropetrovskii metallurgicheskii institut, 1967. 100 p.)

rova Metallurgical Institute) and the "Dnepropetrovsk" (Dnepropetrovsk) Electrical Steel Mill, in Zaporozh'ye) with the participation of V. B. Butkovskiy, M. P. Konisabekov, I. M. Bobkov, L. U. Barash, A. M. Men', V. A. Vologodskiy, V. A. Vologodskiy and G. P. Pribludnyy. 1983

Yu.P. Smell', A.I. Khitrik, P.M. Zhals, Iu.F. Iashina
Iolotogunov, N.Ye. K. Kuvshinov, A.Y. Glazov, L.I. Ieder, M.G. Khodorovich,
Vacuum Treatment of Molten Transformer

P.M. Dantley and Ye.B. Shupinskiy, Institute of Steel and of Solid Steel (A.S. Entepa, L.S. Khasanov, P.S. Plotnikov, Y.I. Mosyats, V.Ka. Paschenko and P.A. Mironov participated in the work)

Butakov, D.K., L.N. Mel'nikov, and M.Ya. Baryuda. Investigation of Vacuum-Treated Steel for Castings

Belanger, B., and S. Kletschka. [Czechoslovak People's Republic, 1958: 128].
Use of Vacuum for Raising the Quality of Aluminum Alloys
(Israel Lens). Transactions of Iron Metallurgy in Olvices.

Thak. S. [Polish People's Republic, Institute of Iron Metallurgy]
Vacuum Melting and Pouring of Alloyed Carbon Steel

Burteev, V.I., E.A. Larasov and I.M. Samarin. Destruction of Nonmetallic Inclusions in Iron Alloys in Vacuum. *Met. Eng. (USSR)*, 1968, No. 12, p. 1082-1084. 3 refs.

Vishkarey, J. J., and J. J. Monahan, Investigation of the
In the Vacuum Treatment of Steel

KINETICS OF STEEL DECARBURIZATION IN VACUUM BY MEANS OF A MASS SPECTROMETER
 Driving, N.I.A., E.A. KUPCHENKO and A.M. KUPCHENKO

Wormer, H. J. Investigation of Gas Liberation and Penetrability of Germanos

IN VACUUM

100

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720620005-9"

KARASEV, R. A.

18:8100
5:4400

68683

S/180/60/000/01/003/027

E071/E135

AUTHORS: Van Tszin-Tan, Karasev, R.A., and Samarin, A.M. (Moscow)
TITLE: The Influence of Carbon and Oxygen on the Surface Tension
of Liquid Iron

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Letallurgiya i toplivo, 1960, Nr 1, pp 30-35 (USSR)

ABSTRACT: The results of the determination of surface tension of liquid iron and its changes under the influence of carbon and oxygen are reported. The surface tension was measured by the method of a laying drop in an atmosphere of purified helium. The apparatus is shown in Fig 1. The method of calculating the surface tension from the shape of the iron drop was described previously (Ref 8). Two methods of heating the drop, resistance and high frequency, were used, in order to compare the data obtained with various heating methods and be able to carry out the determinations at temperatures above 1650 °C. The sample of iron used in the experiments contained 0.001% of oxygen, 0.001-0.002% of carbon, 0.002% of sulphur, less than 0.002% of nitrogen and traces of copper, silicon and nickel. The experimental results are given in the Table (p 32) and Figures 2, 3, 4, 5 and 6. It was found that:

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E071/E135

The Influence of Carbon and Oxygen on the Surface Tension of Liquid Iron

- 1) The surface tension of liquid iron at 1550 °C is 1865 dyn/cm. The temperature coefficient of surface tension $d\sigma/dt = - 0.49$ dyn/cm °C.
- 2) At 1550 °C carbon has no substantial influence on the surface tension of iron. With increasing carbon content from 0.002 to 4.15% the surface tension decreases from 1865 to 1788 dyn/cm. At temperatures below 1520 °C the temperature coefficient of surface tension of liquid iron containing from 2.0 to 4.2% carbon decreases from 1.0 to 0.42 dyn/cm °C. At about 1550 °C polytherms of solutions of carbon and iron reach a maximum. At the same degree of overheating ($\Delta t = 20$ °C) of solutions of iron and carbon, an increase in the concentration of carbon has a substantial influence on the surface tension of iron (Fig 6).
- 3) Oxygen, as a highly surface active element, reduces considerably the surface tension of iron. With increasing concentration of oxygen from 0.001 to 0.184% the surface tension of iron decreases from 1865 to

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S/180/60/000/01/003/027

E071/E135

The Influence of Carbon and Oxygen on the Surface Tension of Liquid Iron

1056 dyn/cm.

4) The maximum adsorption of oxygen amounts to 23.4×10^{-10} mol/cm² at an oxygen concentration of about 0.05%. The authors consider that a mixture of ferrous oxide and ions of oxygen with a predominance of the former is present in the surface layer. 4

There are 6 figures, 1 table and 14 references, of which 9 are Soviet, 4 English and 1 German.

SUBMITTED: October 29, 1959

Card 3/3

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S/180/60/000/02/007/028

E071/E135

12.1100
AUTHORS: Van Tszin-Tan, Karasev, R.A., and Samarin, A.M. (Moscow)
TITLE: Surface Tension of Molten Iron-Manganese¹ and Iron-Sulphur Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 49-52 (USSR)

ABSTRACT: Results of measurements of surface tension of melts in the system Fe - S and Fe - Mn are reported. The measurements were done using the method (shape of the drop) and apparatus previously described (Ref 2). High purity iron (0.001% O; 0.001-0.002% C; 0.002% S; less than 0.002% N, Cu, Si and traces of Ni), electrolytic manganese (0.05% S, 0.06% C) and chemically pure sulphur were used for the preparation of alloys. Melting of the specimens was done in an atmosphere of purified hydrogen which was then removed from the metal by heating at 600 °C in a vacuo of 1.10^{-5} mm Hg. Surface tension values of iron-manganese melts are given in Table 1 and Fig 1, and of iron-sulphur melts in Table 2 and Figs 2 and 3. It was found that the presence of manganese in

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E071/E135

Surface Tension of Molten Iron-Manganese and Iron-Sulphur Alloys

liquid iron reduces its surface tension from 1865 dyn/cm (for pure metal) to 1372 (for iron containing 6.15% of manganese). Unlike the findings of other authors (Refs 4, 5, 6) the dependence of the surface tension on concentration was found to be uniform (Fig 1). The presence of sulphur in liquid iron causes a sharp decrease of surface tension: from 1865 dyn/cm for pure iron to 702 dyn/cm for iron containing 3.44% of sulphur. In the region of very dilute solutions the influence of sulphur on surface tension of liquid iron is higher than that of oxygen. The temperature coefficient of the surface tension of Fe-S melts is positive and equals 0.34 dyn/cm °C. The maximum adsorption of sulphur in liquid iron amounts to $14.60 \cdot 10^{-10}$ mol/cm² at a concentration of sulphur of 0.03%. Thus at the maximum adsorption the surface area per molecule in the adsorption layer amounts to $11.38 \cdot 10^{-16}$ cm². Comparing this figure with ionic dimensions of particles of elemental sulphur ($10.41 \cdot 10^{-16}$ cm²) and iron sulphide ($11.56 \cdot 10^{-16}$ cm²), it

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E071/E135

Surface Tension of Molten Iron-Manganese and Iron-Sulphur Alloys

can be assumed that the surface layer is filled mainly
with particles of iron sulphide.

There are 3 figures, 2 tables and 8 Soviet references. ✓

SUBMITTED: December 21, 1959

Card 3/3

VAN TSZIN-TAN [Wang Ching-t'ang] (Moskva); KARASEV, R.A. (Moskva); SAMARIN,
A.M. (Moskva); SHALINOV, A.G. (Moskva)

Surface tension of molten iron - sulfur - carbon, iron - manganese -
sulfur, iron - manganese - carbon. Izv. AN SSSR. Otd. tekhn. nauk.
Met. i topl. no.1:15-19 Ja-n' '61. (EINA 14:2)
(Surface tension) (Liquid metals)

S/137/62/000/005/002/150
A006/A101

AUTHORS: Wang Ching-t'ang, Karasev, R. A., Samarin, A. M.

TITLE: The effect of impurities on surface tension of pure iron

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 8, abstract 5A47
(V sb. "Fiz.-khim. osnovy proiz-va stali", Moscow, AN SSSR, 1961,
106-111)

TEXT: The authors employed the method of taking photographs of a lying drop on a processed alumina backing at steel founding temperatures in purified He atmosphere to investigate σ_{Fe} , containing (in %): O 0.001, C 0.001 - 0.002, S 0.002, N < 0.002, Cu and Ni - traces; and the effect upon σ_{Fe} of C and O. σ_{Fe} at 1,550°C is 1,865 dyne/cm. Temperature coefficient $d\sigma_{Fe}/dT = -0.49$ dyne/cm. degree. At 1,550°C C has no particular effect on σ_{Fe} . With a higher C content, raised from 0.002 to 4.15%, σ decreases from 1,865 to 1,788 dyne/cm. With an O content, increased from 0.001 to 0.184%, σ decreases from 1,865 to 1,056 dyne/cm. Maximum O adsorption is $23.4 \cdot 10^{-10}$ mole/cm² at an O content of about 0.05%. The hypothesis is advanced, that there is a mixture of FeO and O ions in the surface layer, FeO being prevalent.
[Abstracter's note: Complete translation]

T. Kolesnikova

Card 1/1

BURTSEV, V.T. (Moskva); KARASEV, R.A. (Moskva); SAMARIN, A.M. (Moskva)

Sulfur vapor pressure in contact with iron - sulfur melts. Izv.
AN SSSR. Otd. tekhn. nauk. Met. i topl. no.2:42-48 Mr-Apr '62.
(MIRA 15:4)

(Vapor pressure--Measurement) (Desulfuration)

BURTSEV, V. T. (Moskva); KARASEV, R. A. (Moskva); SAMARIN, A. M. (Moskva)

Mechanism of evaporation and the pressure of sulfur vapors
on iron-carbon-sulfur melts. Izv. AN SSSR. Otd. tekhn. nauk.
Met. i topl. no.6:32-36 N-D '62. (MIRA 16:1)

(Iron--Metallurgy) (Desulfuration)
(Vapor pressure)

BURTSEV, V.T.; KARASEV, R.A.; POBEGAYLO, V.M.; SAMARIN, A.M.; KHEBNIKOV, A.Ye.

Desulfuration of liquid iron in vacuum. Izv. vys. ucheb. zav.;
chern. met. 5 no.5:86-93 '62. (MIRA 15:6)

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(Iron-metallurgy) (Desulfuration)

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SAMARIN, A.M. (Moskva)

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Hydrazine additives in the preparation of feedwater. Sakh.
prom. 37 no.11:73 N '63. (MIRA 16:11)

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nitron. Tekst. prom. 24 no.8:34-37 Ag '64.

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tekhnicheskikh tkaney "Krasnyy Perekop" (for Merkur'yeva).
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tekhnicheskikh tkaney "Krasnyy Perekop" (for Karasev).

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of a turbosupercharger. Avt. prom. 28 no.9:44-45 S '62.
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(Automobiles—Engines—Superchargers)

KARASEV, V.A., doktor tekhn. nauk, prof. (Moskva)

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KARASEV, V. A.

Stability of compounds in an electric field. V. A. KARASEV. *Vestnik Elektrotekh.* 1931, Section III, 58-60. — A method is described for testing stability of oils in an elec. field. The dielec. losses in a layer glass-oil-glass are measured at const. temp. as a function of time. At a certain instant, when decompn. of the oil sets in, the dielec. losses begin to increase. The visible changes within the layer of the oil during decompn. are described and data are given for a microscopic investigation of the resin oil directly under action of an inhomogeneous elec. field. Only gas bubbles were formed. The gas bubbles in the strong elec. field behave like conductors. S. I. MADORSKY

PROCESSES AND PROPERTIES INDEX

ASAC-SEA METALLURGICAL LITERATURE CLASSIFICATION

SUBJECTS										PROCESS AND PROPERTIES INDEX										BIBLIOGRAPHY									
2413. Wave transmission in the windings of (a.c.) machines. Y. A. KARASLY AND Z. G. KADANOV. <i>Elektrichestvo</i> (No. 4) 3-12 (April, 1949) In Russian.																				B 64 C									
The insulation of machines is largely determined by empirical formulas because of incomplete knowledge of the wave effects in windings due to impedance over-voltages. The authors therefore study the determining factors of such wave transmissions. The single-layer stator having one section per slot with short-circuited rotor is replaced by a choke having laminated iron core with air joints. Since iron eddy losses greatly affect wave transmission, this choke's equivalent circuit includes an active resistance r (corresponding to these losses) shunted by inductance L , and by longitudinal capacitance K . This parallel circuit is in series with the stator frame capacitance C to earth. C and K are constant, L and r vary with frequency. As a first approximation this relationship applies for both sine and impulse voltage waves. At the considered frequencies the changes in magnetic permeability do not influence wave processes which are sinusoidal conditions the voltage at any point of the winding is obtained by usual formulae. For impulse conditions the differential equation for the above equivalent circuit is first solved with L and r assumed constant, and then rewritten for the variation of L and r with the changes of wave front and of the frequency of an equivalent sine wave as the wave traverses the winding. The oscillograms of voltage waves at different winding points are analysed by Fourier double integral since the effect of the impulse wave is considered as that of a number of harmonics. Only the wave front, its voltage gradient and amplitude, is of any consequence. The experiments are considered to give results sufficiently accurate to prove the above method. Iron eddy losses be ignored and inductance L in the above equivalent circuit be regarded as constant, an incorrect conception of the wave effects in machine windings will result.																				L. MAKARENKO									
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33

B

New System of Nonincandescent Luminescent Lighting for Mineshafts and Chemical Industry. (In Russian.) V. A. Karasev. *Elektrichestvo* (Electricity). No. 12, Dec. 1949, p. 10-14.

Describes above system, particularly adaptable for eliminating the danger of explosion in shafts and in chemical industries in which explosive gases may be present. It is characterized by utilization of the ferro-magnetic phenomenon of resonance on the third harmonic. Theoretical bases of this system are discussed. Data are tabulated and charted. Importance of this system is emphasized.

PROF. DR. TECH. SCI.
ALL-UNION POWER ENG. INST. IM. LENIN

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

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<p>621,327.43</p> <p>1966. Starting and supply equipment for fluorescent lamps. V. A. KARANV. <i>Elektricheskoye</i>, No. 12, 50-4 (Dec., 1950) <i>In Russian</i>.</p> <p>The various systems are described and the theory of the ignition process is given in its simplest form. Starter-less systems are preferred. An efficient starterless system described uses an autotransformer circuit, in which the primary and secondary windings are placed on separate limbs, provided with a magnetic shunt with controllable gap. The primary cost of this apparatus is 75% higher than the usual choke circuit, but is compensated for by more economical operation and increased life of the lamps. Tabulated test results confirm this.</p> <p>B. F. KRAUS</p>																																																			
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KARASEV, V. A.

USSR/Electricity - Transformers

Nov 52

"Calculation of Overvoltages in Transformer Windings," Prof V. A. Karasev, Dr Tech Sci, and Cand Tech Sci A. V. Sklyanin, Ivanovo Power Eng Inst

"Elektrichestvo" No 11, pp 46-50

Cites results of research on magnetic and electrostatic linkages between elements of transformer windings and on overvoltages in them under pulse and h-f operation. Works out method for exptl investigation of mutual induction

240T65

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 KALASHNIKOV, V.A., inzh.; KLOBUKOV, P.P., kand.tekhn.nauk; KLUB-
 NIKIN, P.F., kand.tekhn.nauk; KRASSOV, I.M., kand.tekhn.nauk;
 PEL'POR, D.S., doktor tekhn.nauk; PETROV, V.V., kand.tekhn.nauk;
 ROZENBLAT, M.A., doktor tekhn.nauk; RUZSKIY, Yu.Ye., kand.tekhn.
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 nauk, retsenzent; KARASEV, V.A., doktor tekhn.nauk, retsenzent;
 RAGOZIN, Yu.D., kand.tekhn.nauk, retsenzent; REYNGOL'D, Yu.R., inzh.,
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 A.G., kand.tekhn.nauk, retsenzent; SHEVYAKOV, A.A., kand.tekhn.nauk,
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GUR'YANOVA, N.I., prepodav., retsenzent; DATNER, M.G.,
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Make wider use of the logging trucks of the Komi Lumber Industry.
Mekh. i avtom. proizv. 18 no.10:20-21 O '64. (MIRA 17:12)

KARASEV, V. P.

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П.В.Жуков	металл.

report submitted for the 5th Physical Chemical
Conference on Steel Production, Moscow-- 30 Jun 1959

KARASEV, V.P.

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PHASE I BOOK EXPLOITATION

SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th,
Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii
(Physicochemical Bases of Steel Making; Transactions of the
Fifth Conference on the Physicochemical Bases of Steelmaking)
Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted.
3,700 copies printed.

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A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy
of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg.
Tech. Ed.: V. V. Mikhaylova.

Card 1/18

Physicochemical Bases of (Cont.)

SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

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S/137/61/000/012/001/149
A006/A101

AUTHORS: Ageyev, P.Ya., Karasev, V.P., Shkarednyy, M.V.

TITLE: On the problem of deoxidizing steel with aluminum

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, -1961, 15, abstract
12A84 ("Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t",
1960, no. 11, 3 - 6)

TEXT: The simultaneous changes of O and Al content during deoxidation of liquid Fe with aluminum were investigated in a 5 kg laboratory induction furnace with magnesite lining. Melting and holding of the liquid metal were performed in pure argon atmosphere. An amount of 0.3% Al was added to the metal during thorough stirring of the pool with a quartz rod. In all heats a sharp decrease of the O content in the metal was observed immediately after the addition of Al. At an initial O content as high as 0.03% in experimental heats, only about 10% of the Al added are eliminated due to the reduced concentration of O in the metal. Losses of Al on account of Al oxidation on the pool surface did not take place; at such an Al-concentration, evaporation of Al is negligible. Losses of 40% Al, determined during the investigation, are considered to be caused by

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On the problem of deoxidizing steel with aluminum

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the interaction of Al with Fe oxides of the active layer of the furnace lining. Within the first 5 - 7 minutes of holding the metal, the total O content is reduced to minimum values; during longer holding it does not change or increases slightly; this occurs on account of levelling the rate of O supply and elimination from the metal. Establishing the constancy of the total O content in the metal at this moment does not correspond to an equilibrium state, since the Al concentration varies continuously. The equilibrium state begins after more than 15 minutes. The equilibrium constant of the deoxidation reaction of Fe with aluminum in a magnesite crucible is estimated to be $1 \cdot 10^{-11}$ - $0.5 \cdot 10^{-11}$.

Yu. Nechkin

[Abstracter's note: Complete translation]

Card 2/2

KARASEV, V.P.; AGEYEV, P.Ya.

Oxygen removal from molten iron deoxidized by aluminum. Izv. vys.
ucheb. zav.; Chern. met. 6 no.7:83-90 '63. (MIRA 16:9)

1. Leningradskiy politekhnicheskii institut.
(Steel—Metallurgy)

KARASEV, V.P.

Oxygen behavior during steel deoxidation in arc furnaces. Trudy
IPI no.253:49-57 '55.

(MIRA 18:8

ACC NR: AR6034100

SOURCE CODE: UR/0089/66/021/004/0294/0294

AUTHOR: Kolyada, V. M.; Karasev, V. S.

ORG: none

TITLE: Calorimetric dosimetry in a nuclear reactor

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 294

TOPIC TAGS: nuclear radiation, thermal radiation detector, calorimetry, radiation dosimetry, nuclear reactor technology

ABSTRACT: This is a summary of article No. 108/3687, submitted to the editor and filed, but not published in full. The authors point out the limitations of the use of ionization, chemical scintillation, and other dosimetry methods for intense radiation fluxes, and the advantages inherent in recently developed calorimetric means. They therefore review briefly methods and instruments for calorimetric dosimetry. These methods are subdivided, depending on the method of determining the absorbed energy, into three groups - adiabatic, kinetic, and isothermal. An attempt is made to compare the described calorimetric methods and instruments, to disclose their advantages and disadvantages, and to determine their field of application. The materials in the paper will help scientific-technical workers engaged in reactor research to estimate the possibility of calorimetric instruments for use or for their further perfection.

SUB CODE: 18/ SUBM DATE: 15Apr66

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UDC: 614.8: 539.12.08: 621.039.5

ACC NR: AP6036759

(N)

SOURCE CODE: UR/0020/66/171/001/0084/0087

AUTHOR: Karasev, V. S.; Aleksandrov, A. P. (Academician)

ORG: none

TITLE: Vacancy mechanism of the accelerated failure of materials at irradiation under stress

SOURCE: AN SSSR. Doklady, v. 171, no. 1, 1966, 84-87

TOPIC TAGS: chromium nickel steel, austenitic steel, heat resistant steel, neutron irradiation, steel irradiation, steel failure, failure mechanism, irradiation effect

ABSTRACT: A theoretical study is presented of the effect of irradiation with fast neutrons on the processes of deformation and failure of metals. Equations are derived which show that coagulation of vacancies into complexes plays a significant part in the process of deformation and failure. Stress-rupture tests with a chromium-nickel heat-resistant steel (20% Cr, 28% Ni) showed that irradiation increased the creep rate and accelerated steel failure. The specimens strained to rupture in the reactor failed in a brittle manner without necking and with numerous cracks along the grain boundaries. Figure 1 shows the relative decrease in the rupture life of steel subjected to stress-rupture tests and irradiation at various temperatures under a constant load: $\xi = \tau_0/\tau_r$, where τ_0 is the rupture life of original steel and τ_r is the rupture life of irradiated steel. It is concluded that

Cord 1/3

UDC: 539.12.04

ACC NR: AP6036759

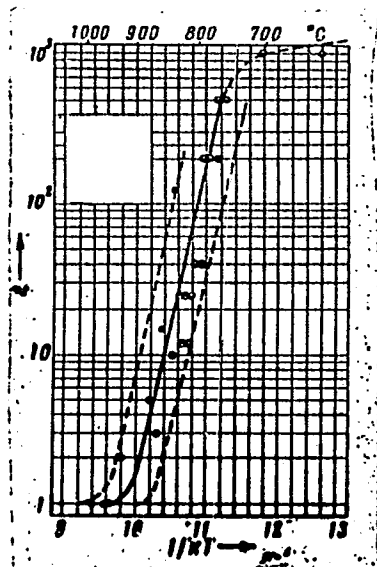


Fig. 1. Decrease in rupture life versus inverse temperature

the determination of mechanical characteristics of materials after instead of during irradiation may lead to significant errors in estimating the service life of nuclear

Cond. 2/3

ACC NR: AP6036759

reactor parts located in fields of intense neutron radiation at temperatures higher than 0.4 of the melting temperature. Ye. V. Lyapin, Yu. P. Mel'nik-Kutsin and V. I. Grisenko are thanked for their assistance in the work. Orig. art. has: 4 figures and 8 formulas.

SUB CODE: 11/ SUBM DATE: 28Jul65/ ORIG REF: 009/ OTH REF: 006/ ATD PRESS: 5107

Card 3/3

KNISHNIK, Ye.I., inzh.; KARASEV, V.S., inzh.

Systema for studying reactor radiation on the electrical characteristics
of liquid dielectrics. Energ. i elektrotekh. prom. no.1:42-44. Ja-Mr
'65. (NSRA 13:5)

L 6468-66 EWT(m)/EPF(c)/ETC/EPF(n)-2/EWG(m) WW/DM
ACCESSION NR: AP5019818

UR/0089/65/019/001/0074/0075
621.039.55:536.629

AUTHOR: Karasev, V. S.; Kolyada, V. M.

TITLE: Calorimetric determination of absorbed dose of reactor ionizing radiation by the method of compensation of the heat release in the investigated sample

SOURCE: Atomnaya energiya, v. 19, no. 1, 1965, 74-75

TOPIC TAGS: ionizing radiation, nuclear reactor characteristic, radiation dosimetry, calorimetry/ VVR M, RFT

ABSTRACT: The authors point out that earlier calorimetric methods could not be used in high intensity water-moderated water-cooled reactors (such as VVR-M) because of the excessive heat released in the samples. The method proposed makes possible high-accuracy measurements of high power absorbed doses without involving the thermophysical constants of the substances. It is based on compensating electrically for the heat released in the investigated sample. A diagram of the calorimeter is shown in Fig. 1 of the Enclosure. In the absence of the sample, the energy of the ionizing radiation is equal to the electric power of the calorimeter heating if the calorimeter surface temperature is the same with and without the sample. The average experimental accuracy of the calorimeter at operating temperatures was 0.18 mv/watt. The accuracy claimed for this method is

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ACCESSION NR: AP5019818

3--5%. Tests on samples of lead, tin, and steel yielded for the absorbed dose power at 10 MW reactor rating values 0.665, 0.509, and 0.425 Mrad/sec, respectively. Comparison with earlier data on the RFT (physical and technical research) reactor (N. F. Pravdyuk et al., *Atomnaya energiya* v. 9, 380, 1960) shows that the total absorption dose in the VVR-M reactor is much higher than in the RFT reactor at the same neutron flux, owing to the presence of neutron-absorbing graphite blocks in the RFT reactor. Orig. art. has: 1 figure and 2 tables. ¹⁵

ASSOCIATION: none

SUBMITTED: 15Jul64

ENCL: 01

SUB CODE: NP

NR REF SOV: 000

OTHER: 000

Card 2/3

L 6468-66

ACCESSION NR: AP5019818

ENCLOSURE: 01

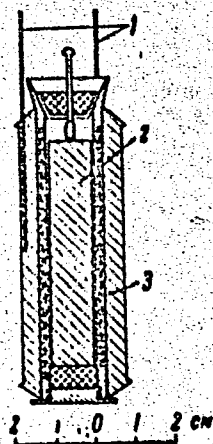


Fig. 1. Diagram of calorimeter

- 1 - Thermocouples,
- 2 - sample,
- 3 - heater.

OC

Card 3/3

KARASEV, V.S.; PUDCHENKO, E.S.; SHISHKINA, N.A.

Apparatus for measuring the viscosity of liquids within a
wide temperature range. Teoret. i eksper. khim. 1 no.4:551-553
'65. (MIRA 18:10)

1. Institut fiziki AN UkrSSR, Kiyev.

L 28388-66 EWT(m)

ACC NR: AP6001797

SOURCE CODE: UR/0089/65/019/006/0532/0532

AUTHOR: Kolyada, V. M.; Karashev, V. S.

ORG: None

TITLE: Calorimetric dosimetry of gamma radiations from nuclear reactor

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 532

TOPIC TAGS: nuclear reactor, gamma detection, radiation dosimetry, calorimetry

ABSTRACT: An abbreviated version of the original paper is presented dealing with the application of calorimetric method to measurements of gamma-ray doses. The study was related to the doses absorbed by various samples made of heavy materials such as lead, tin and tungsten. The energy spectrum of gamma radiations from a 10 Mw reactor of VVR-M type was measured in the energy range of 0 to 1.5 Mev and graphically illustrated. The mass absorption coefficient was then calculated and plotted against atomic numbers (from 5 to 85). This method permitted determination of the absorbed gamma-ray doses with a precision lower than 10%. Orig. art. has: 2 diagrams.

SUB CODE: 18 / SUBM DATE: 29July65 / ORIG REF: 000 / OTH REF: 000

Card 1/1

UDC: 536.629

2

Application of polarization-microscopic technique in the study of catalysis in multimolecular adsorbed layers. V. I. Gol'danskii and V. V. Karasev. *Doklady Akad. Nauk S.S.S.R.* 97, 703-4 (1947). The technique was explained in the previous paper (C.A. 40, 4881d). A study of EtOH-AcOH esterification is briefly reported. The kin-

etic characteristics in the adsorbed layer are identical with that in the liquid state if the adsorbed layer contains at least 10 mol. layers.
G. M. Kosolapoff

KARASEV. V. , DERYAGIN, B. V., GOL'DANSKIY, V. I.

"Optical Investigation of Polymolecular Adsorption and Condensation of Vapors on Glass," Dok. AN, 57, No. 7, 1947

KARASEV, V. V., GOL'DANSKIY, V. I.

"Investigation of the Polymolecular and Condensation of Vapors on Glass,"
Dok. AN, 57, No. 8, 1947

USSR/Physics
films

Techniques

Oct 48

"Application of a Rotating Polarizer to the Study of the Polarization State in Reflected and Diffuse Light With the Particular Aim of Measuring Precisely the Width of Thin Films," V. V. Karasev, Corr Mem, Acad Sci USSR, B. V. Deryagin, Lab of Surface Forces, Inst of Phys Chem, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 6

Use of an "electric eye" type apparatus obviated the necessity of amplifying very low frequencies or

60/497106

Oct 48

USSR/Physics (Contd)

rotating the polarizer quickly. To calculate the thickness of a film, it is sufficient to determine the reflection path from the dry "underlayer." Thereafter, it can be determined by Obreykov's method. Submitted 28 Aug 48.

60/497106

KARASEV, V.V.

KARASEV, V. V.

PA 43/49T60

USSR/Engineering
Lamps, Mercury
Ozone

Apr 49

"Protective Casing for Mercury Lamps," V. V.
Karasev, Inst ~~Physicochem~~, Acad Sci USSR, 1 p

"Zavod Lab" Vol XV, No 4

Worked out a special construction for a casing
with water cooling. Casing is a cylinder with
two walls containing a window, door, openings for
terminals, and two pipes for carrying off water.
Casing is designed to eliminate danger of burns,
and reduce the escape of ozone.

43/49T60

KARASEV, V. V.

B. V. Deriagin and V. V. Karasev. Modulation method of measuring dichroism. P. 708

Inst. of Physical Chemistry
Academy of Sciences, USSR
April 10, 1951

SO: Journal of Technical Physics, Vol. XXI, No. 6, June 1951

KARASEV, V.V.; DERYAGIN, B.V.

Films (Chemistry)

Micropolarization methods for measuring the thickness of thin films. Trudy Inst. fiz. khimii AN SSSR No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.